



Use the Sphere Tool

## INTRODUCTION

EnSight provides a spherical specification tool called the "Sphere" tool. When visible, the Sphere tool appears as a (typically white) sphere icon with a line running down the central axis. The Sphere tool is used to supply EnSight with a spherical specification, for example to specify the location for a sphere clip or cut.

## BASIC OPERATION

In many cases, the Sphere tool will automatically turn on when performing some function that requires it. You can also turn the tool on and off manually by toggling Tools > Quadric > Sphere. The Sphere tool can be placed in two ways: interactively through direct manipulation of tool "hotpoints" with the mouse or precisely positioned by typing coordinates into a dialog.

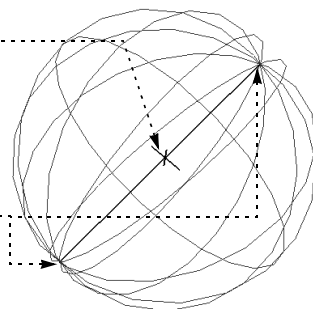
### To move the Sphere with the mouse:

1. Place the mouse pointer over the center of the tool.
2. Click (and hold) the left mouse button.
3. Drag the Sphere to the desired location.
4. Release the mouse button.

### To stretch the Sphere with the mouse:

1. Place the mouse pointer over either of the center line's endpoints.
2. Click (and hold) the left mouse button.
3. Drag the endpoint to the desired location.
4. Release the mouse button.

(Undo/Redo button at the bottom of screen can be used to undo/redo the tool transformation)



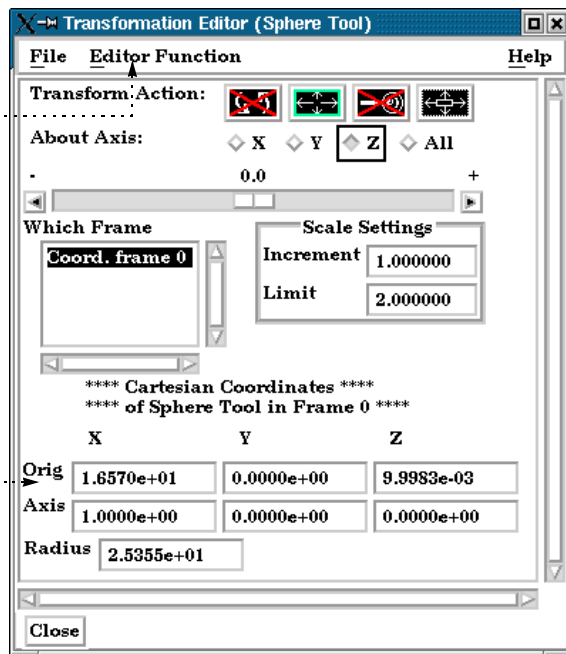
Sphere moving and stretching is restricted to the plane perpendicular to your line of sight. If you need to move the Sphere in another plane, rotate the model such that the desired translation plane is perpendicular to your new line of sight. (Note that the Sphere will not exactly track the location of the mouse pointer.)

### To set the Sphere by specifying coordinates:

1. Open the Transformation Editor dialog by clicking Transf. Edit... on the desktop.

2. Select Editor Function > Tools > Sphere.

3. Enter the desired coordinates for the Origin (location of the center point), the Axis (direction vector), and/or the Radius and press return.



if you are going to create a developed surface from a spherical clip, you need to be aware of how the spherical axis orientation affects this operation. (See [How To Create a Developed Surface](#))



You can also translate the Sphere by setting the desired axis of translation in the Axis pop-up and manipulating the slider bar. In this case, the values in the “Scale Settings” section control the sensitivity and limit of the slider action.

Note that you can also use this dialog to view (rather than set) the position of the Sphere since the numeric values always update to reflect the current location. If you are positioning the Sphere interactively with the mouse, the values will update when the mouse button is released.

## ADVANCED USAGE

After a model has been loaded, the initial location of the Sphere center is set to the “look-at” point – the geometric center of all visible geometry and aligned with the X axis. The coordinates of the Sphere are specified with respect to the default frame: frame 0. However, if you have created additional **frames**, you can position the Sphere relative to the origin of a different frame. This is accomplished by selecting the desired frame in the “Which Frame” list in the Transformation Editor dialog.

You can easily reset the position and orientation of the Sphere tool to the default. See [How To Reset Tools and Viewports](#) for more information.

Positioning a 3D tool with a 2D device (the mouse) can be difficult. Multiple **viewports** are sometimes helpful in positioning tools since you can see the tool simultaneously from multiple vantage points.

## SEE ALSO

Other tools: [Cursor](#), [Line](#), [Plane](#), [Box](#), [Cylinder](#), [Cone](#), [Surface of Revolution](#). See the How To article on [Frames](#) for additional information on how frames effect tools.

User Manual: [Tools Menu Functions](#)